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(54) Modular type structure incorporating agitator devices for stirring paints in cans.

(57) The structure comprises a shelf 1 having at least one intermediate deck 2 and carrying independent electric motors 4 each driving one pair of tongues 7 adapted to rotate respective agitator or stirring devices 10, as normally provided with means for connection, mechanically and electrically, to other similar shelves 1 and adapted to receive, on the lower and intermediate decks 1 thereof, box-like supporting elements 11 effective to change the height level of the stirring devices 10 in respective ones of the paint cans 9 to fit corresponding rotary drive tongues.

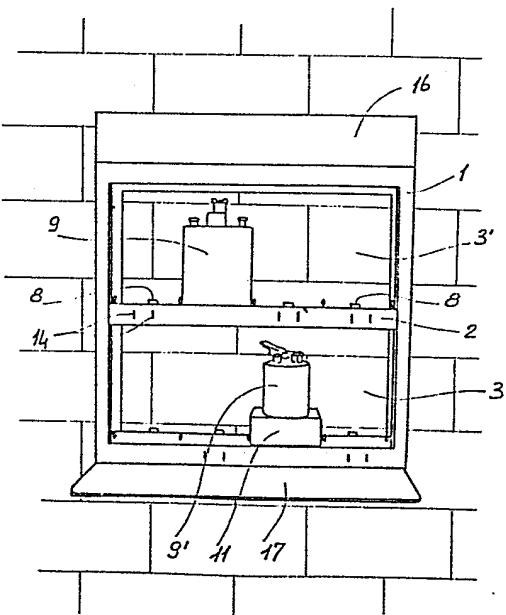


Fig. 1

This invention relates to a modular type structure incorporating agitator devices for stirring paints in cans.

As is known, owing to the very large number of color shades required by users of modern paints, particularly in the car body painting field, it has become common practice for paint manufacturers to supply the users with a range of basic colors and formulations for their correct mixing to achieve any desired color shades.

Also known is that to consistently obtain a desired shade, it is necessary that the basic colors be substantially homogeneous, i.e. that the dispersed pigments be uniformly distributed throughout the suspension.

For that purpose, such basic colors are currently supplied in can packages whereinto an agitating device may be introduced which is driven by some external means through a small bracket mounted on a shaft extending coaxially with the can and carrying paddles or the like.

Such cans are placed in specially provided apparatus, usually termed "stirrers", which have a plurality of rotating tongues, each adapted to engage with one of said brackets and entrain it rotatively, thus subjecting the paint contained in a respective can to a stirring action.

Such prior stirring apparatus are conventionally composed of a shelf of considerable size, including

plural decks at suitable distances apart, onto which the individual cans are secured according to their height dimensions.

With those same prior stirring appara, moreover, the motion for the various tongues, which engage with the corresponding brackets of the stirring paddles, is derived from a common electric motor through an appropriate gear drive.

Consequently, in the event of a motor failure, the whole apparatus is made inoperative until the motor has been replaced or repaired.

Furthermore, the user is obliged to operate the whole apparatus even for a partial utilization thereof, which results in an obvious waste of power.

It is also to be underlined that conventional stirring appara, owing to their one-piece construction and bulk, can not always fit adequately into pre-existing spaces, thereby they may require the erection of new enclosures.

It is a primary object of this invention to obviate such prior problems by providing a modular structure for stirring paints in cans, which affords the possibility of implementing stirring appara in suitable sizes to meet specific user's requirements.

Another object of the invention is to provide a modular structure for stirring paints in cans, which affords the possibility of implementing variously configured stirring appara to suit specific available space conditions.

It is a further object of this invention to provide a modular structure for stirring paints in cans, which can ensure a high degree of operation continuity, its working parts being not driven by a single motor.

Still another object of the invention is to provide a modular structure for stirring paints in cans, which affords the possibility of implementing stirring apparatus that may be expanded to meet growing volume requirements by the user.

These and other objects, such as will be apparent hereinafter, are achieved by a modular type structure for stirring paints in cans, according to the invention, characterized in that it comprises a shelf having at least one intermediate deck and carrying independent electric motors each driving one pair of tongues adapted to rotate respective agitator devices, as normally provided with the paint cans, said shelf being provided with a means for connection, mechanically and electrically, to other similar shelves and being pre-arranged to receive, on the lower and intermediate decks thereof, box-like supporting elements effective to change the height level of said agitator devices in respective ones of said paint cans to fit corresponding rotary drive tongues.

Further features and advantages of this modular type structure for stirring paints in cans will be more readily understood from the following description of a preferred embodiment of the structure as

illustrated by way of example only in the accompanying drawings, where:

Figure 1 is a schematical front view of this modular structure;

Figure 2 is a fragmentary view of the shelf upper compartment forming an integral part of the structure;

Figures 3 and 4 illustrate some feasible combination of several modular structures according to the invention.

Making reference to the drawing views, this modular structure comprises a shelf 1 formed by a substantially square framework of suitable depth having an intermediate deck 2.

Mounted under the upper wall of the resulting two compartments, 3 and 3', are a pair of vertical axis electric motors 4, each adapted to rotatively drive, through a gear system 5, two shafts 6, also having vertical axes, which have articulated to their free ends a respective tongue 7 comprising a rectangular plate which extends mainly in a horizontal direction.

Mounted on two base decks of said compartments are clips 8 extending at symmetrical locations along circumferences and being adapted to securely hold the can 9 including the agitator device 10 and containing paint to be stirred.

It is, moreover, possible to mount on said base decks 3 and 3' of the compartments adapter elements 11 comprising box-like bodies, also provided with

upper clips 8.

Said adapter elements would be used, of course, where smaller height cans 9' are to be handled, so as to bring their agitator device 10 in engagement with the respective rotating tongue 7.

Advantageously applied to the fronts of the walls supporting the motors and rotating tongues, are flexible protective lugs 12 adapted to prevent the operator's hands from inadvertently contacting the rotating tongues.

In particular, formed at the four horizontal corners of the shelf 1 are respective receptacles 13 for accommodating small blocks in a stable manner which carry a terminal board for electric connection to a number of shelves.

Formed on the front faces of the base walls of the two compartments formed by the shelf 1, and at the cited clip sets 8, are pairs of vertical slots 14 adapted to receive labels 15 indicating the nature of each overlying can contents.

Above the shelf, it is also possible to locate a small vertical wall 16 adapted to function as a support for any advertising sign or a lamp, while a horizontal deck 17 may be provided at the bottom or at the top of the shelf to serve as a supporting surface.

Said shelf may be, thanks to its peculiar construction, practically arranged in an array and/or stack of units, as shown illustratively in Figures 3 and 4, depending on specific work requirements and available space, the individual shelves being associated

together by means of ordinary screw fasteners.

In particular, additionally to the implementation of a shelf as described above, which may be called a "standard module", a basic shelf or "basic module" is contemplated which carries, at suitable locations, a switch, a fuse, and optional indicator lights.

The structure made up with the aforesaid shelves may be completed with a bed 18, an optional locker (not shown) having the same dimensions as the shelves, and appropriate lighting devices.

From the foregoing description and observation of the various views in the accompanying drawings, the high degree of functionality and practicality of the modular structure for stirring paints in cans, according to this invention, may be fully appreciated.

CLAIMS

1. A modular type structure for stirring paints in cans, characterized in that it comprises a shelf 1 having at least one intermediate deck 2 and carrying independent electric motors 4 each driving one pair of tongues 7 adapted to rotate respective agitator devices 10, as normally provided with the paint cans 9, said shelf 1 being provided with a means for connection, mechanically and electrically, to other similar shelves and being pre-arranged to receive, on the lower and intermediate decks thereof, box-like supporting elements 11 effective to change the height level of said agitator devices 10 in respective ones of said paint cans 9 to fit corresponding rotary drive tongues.

2. A modular type structure according to claim 1, characterized in that said shelf 1 comprises a substantially square framework of a suitable depth having an intermediate deck 2 forming two compartments 3, 3', under the upper walls of which there is mounted a pair of vertical axis electric motors 4 each adapted to rotatively drive, through a gear system 5, two shafts 6 also having vertical axes and articulated at the free end thereof a respective tongue 7 comprising a rectangular plate extending substantially in a horizontal direction.

3. A modular type structure according to one or more of the preceding claims, characterized in that mounted on the two base decks 2 of said compartments 3, 3' there are clips 8 located at symmetrical locations on circumferences and being adapted to securely hold the various cans.

4. A modular type structure according to one or more of the preceding claims, characterized in that flexible protection lugs 12 may be applied to the fronts of the horizontal walls of said shelf 1 carrying the motor 4 and rotating tongues 7.

5. A modular type structure according to one or more of the preceding claims, characterized in that on the four horizontal corners of said shelf 1 there are formed respective receptacles 13 adapted to stably receive small blocks carrying a terminal board for electric connection between a number of such shelves 1.

6. A modular type structure according to one or more of the preceding claims, characterized in that formed on the front faces of the base wall of said two compartments 3, 3' defined by said shelf, there are, at said clip sets, pairs of vertical slots 14 adapted to receive labels 15.

7. A modular type structure according to one or more of the preceding claims, characterized in that, above said shelf 1, a small vertical wall 16 may be provided to act as a support for advertising signs, while a horizontal supporting deck 17 may be provided at the bottom or top of the shelf.

8. A modular type structure according to one or more of the preceding claims, characterized in that said shelf 1 may be arranged in arrays and/or stacks of several units, wherein the individual shelves 1 are interconnected by means of screw fasteners.

9. A modular type structure according to one or more of the preceding claims, characterized in that said shelf

1 is provided, at a suitable location, with a switch, fuse, and optional indicator lights and optional timer.

10. A modular type structure according to one or more of the preceding claims, characterized in that with said shelf 1 there may be arranged to cooperate a bed, optional locker having the same dimensions as the shelf, and appropriate lighting devices.

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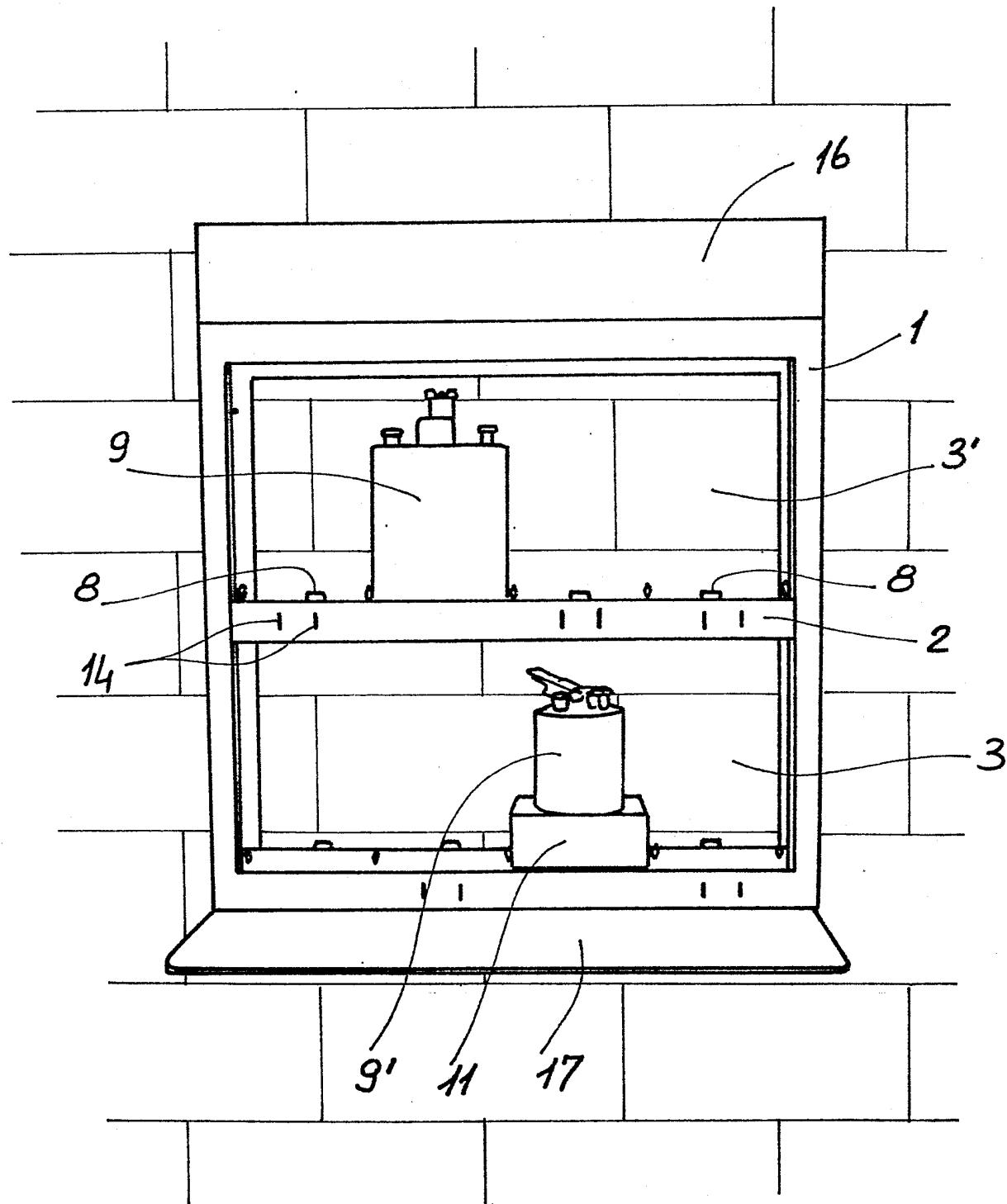
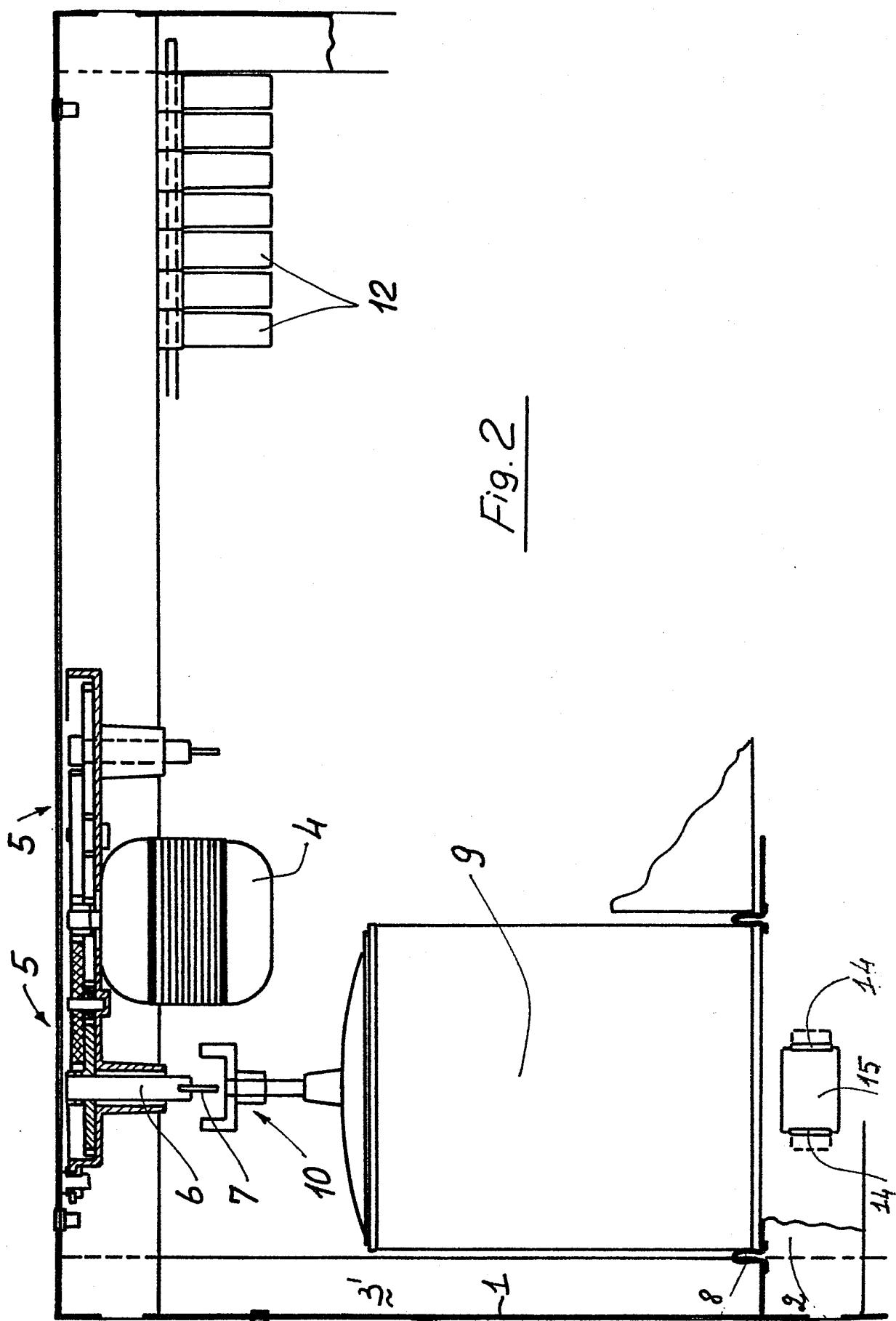
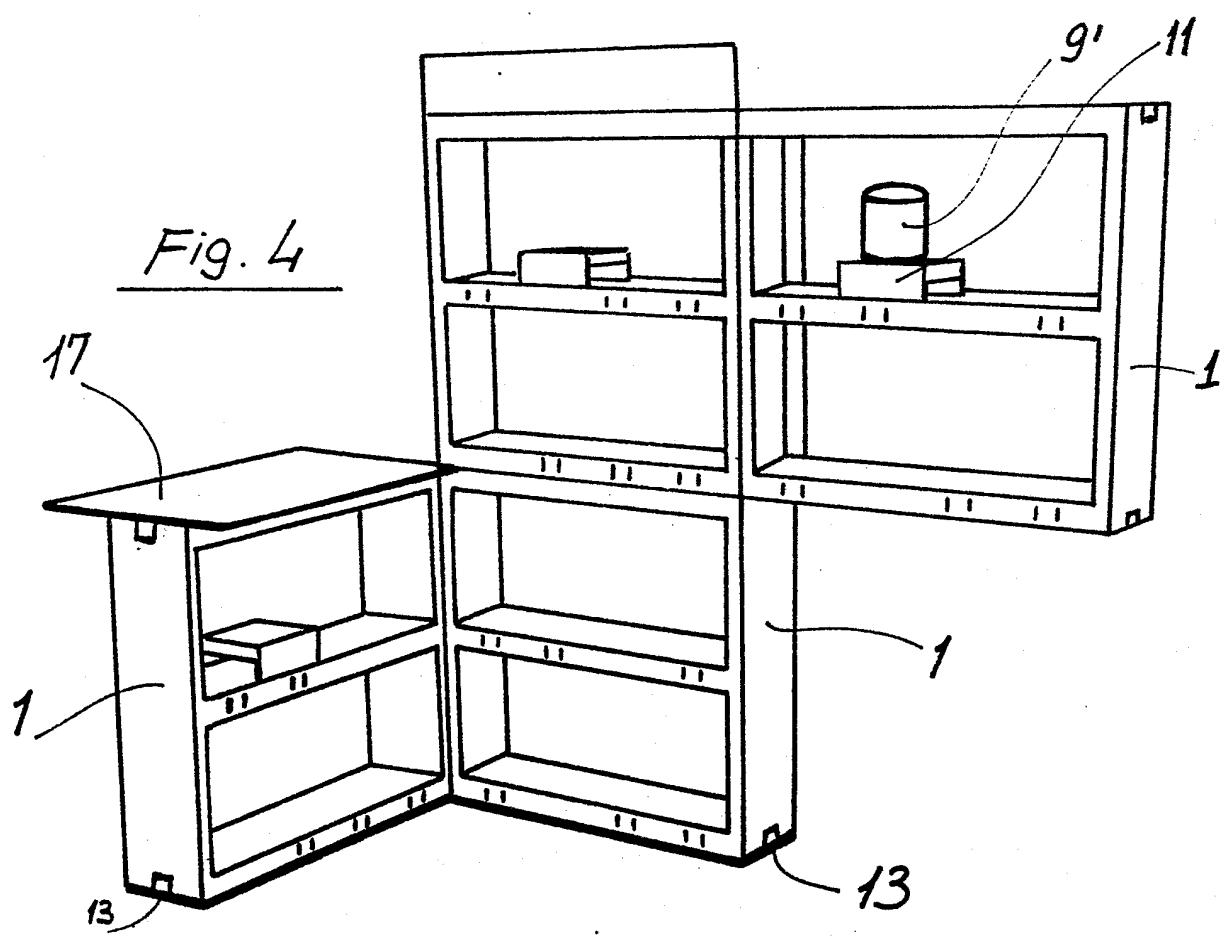
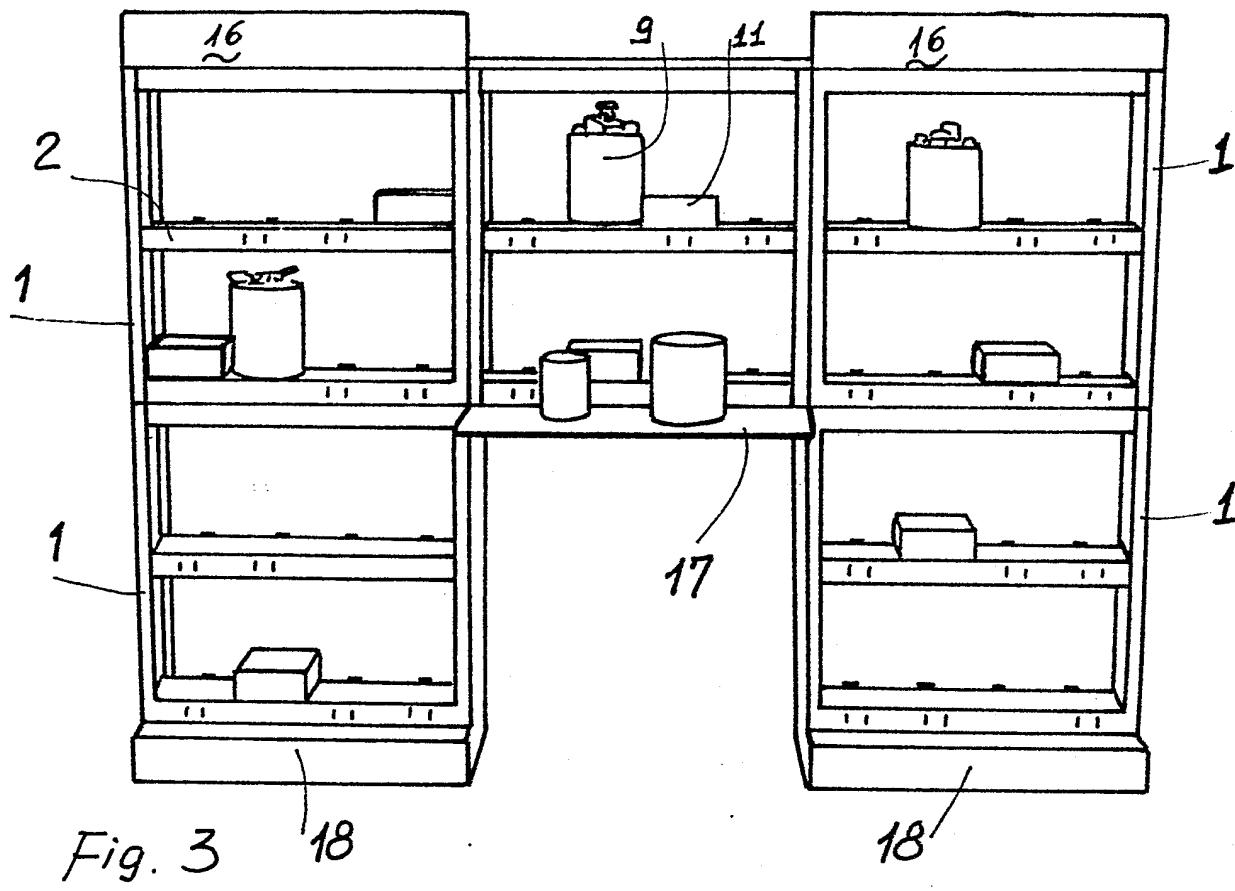


Fig. 1





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**ABSTRACT:**

CHG DATE=19990617 STATUS=O> The structure comprises a shelf 1 having at least one intermediate deck 2 and carrying independent electric motors 4 each driving one pair of tongues 7 adapted to rotate respective agitator or stirring devices

10, as normally provided with means for connection, mechanically and electrically, to other similar shelves 1 and adapted to receive, on the lower and intermediate decks 1 thereof, box-like supporting elements 11 effective to change the height level of the stirring devices 10 in respective ones of the paint cans 9 to fit corresponding rotary drive tongues.